"Design-Connection" = Sapphire & Engineering both open, Sapphire is managing truss quantities seen in Engineering & determining which truss bears on which other truss

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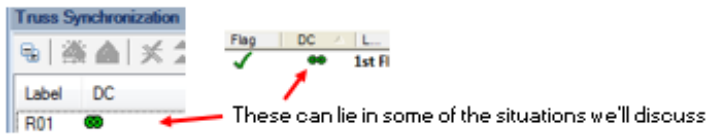
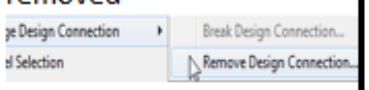


Software Behaviour re: Inter-Truss Loads

.tre Origin & Sapphire State

.tre was created in a non-DC environment (e.g. eFrame job) or had its DC removed



Only loads that existed when the truss was last saved[1] will be present[2]

Source column of Loads window (Fig. 1) will show "Manual". Panels column will show name of carried truss, for loads that were created by eFrame, or by Sapphire if there used to be a design connection.

If a truss is modelled in Sapphire with the exact profile as the .tre[3], a design connection can be established between the two using Create Trusses. This will give the usual prompt for you to confirm sending the truss to Engineering, but then after doing so it will prompt again. The first send will reestablish the ability to open the truss in Engineering from Sapphire but *not* the actual design connection[4], and on the second send the connection is fixed.
If the truss in Sapphire is a copy of the original that has been pasted, you must first highlight it and select Make Production Truss before the above steps[5].

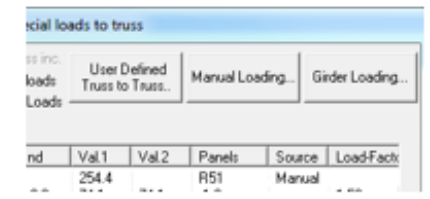


Figure 1 - Special loads

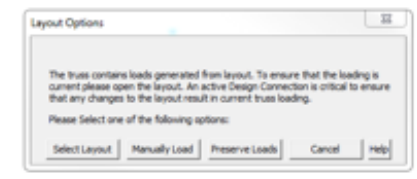
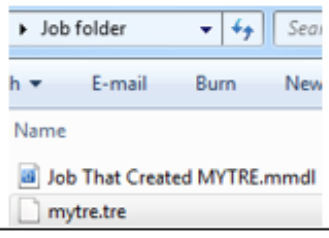
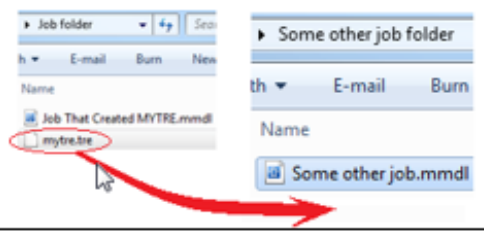


Figure 2 - Select Layout prompt. If you're doing a batch run, or if you select an .mmdl outside the current folder, it will not accept your selection.

.tre was created in a DC environment Sapphire open

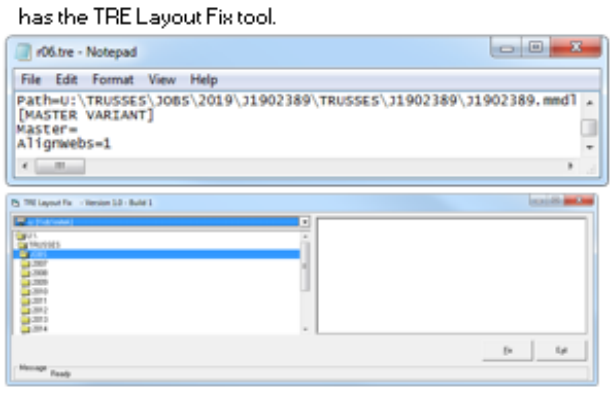
.tre Location:





"Design-Connected Environment"

Only risk is Path variable points to wrong place, as when job folder copied-and-pasted instead of "Save-As New Job". If so, attempting to either view the Loads window or save the truss will cause the "Select Layout" prompt (Fig. 2). To avoid this Mitek has the TRE Layout Fix tool.



Only loads that existed when the truss was last saved[1] will be present[2]

Source column of Loads window (Fig. 1) will show "Manual". Panels column will show name of carried truss.

Attempting to save the truss will cause the "Select Layout" prompt (Fig. 2).

If the Sapphire truss entity that was used to create the .tre has been copied and pasted into *Some other job.mmdl* , a design connection can be reestablished provided the truss in Sapphire has the exact profile as the .tre[3]. Highlight the copy and select Make Production Truss[5], followed by Create Trusses. Then immediately save the .tre when it opens in Engineering, and when prompted for the layout choose *Some other job.mmdl* . Finally, run Reestablish Design Connection on the truss. The truss quantity in Engineering will be reset to the actual number in Sapphire if it had been manually changed, and automatic management of truss quantities will resume along with real-time loading and the ability to open the truss in Engineering from Sapphire.

.tre was created in a DC environment Sapphire closed

Only loads that existed when the truss was last saved[1] will be present[2]

Source column of Loads window (Fig. 1) will show .mmdl name. Panels column will show name of carried truss.

Only loads that existed when the truss was last saved[1] will be present[2]

Source column of Loads window (Fig. 1) will show .mmdl name. Panels column will show name of carried truss.

Attempting to save the truss will cause the "Select Layout" prompt (Fig. 2).

Pasting Part of One Sapphire Model Into Another

When these details are understood, it becomes possible to re-use a part of a Sapphire model containing trusses in another Sapphire model, copy the corresponding .tre's to the new job folder, and still end up with a design-connection.

A legacy job at a truss company may contain any mixture of 1) non-DC trusses, 2) trusses where the Sapphire entity and .tre were separately copied from an older job without properly re-establishing the DC, and 3) DC-trusses (which will become like group (2) once we paste them in the new job). Therefore either of the 2 processes discussed might need to be carried out on any given truss, if we want to establish a DC on a truss in its given state.

However a faster way to establish a DC on all pasted trusses is to first select Remove Design Connection on all the ones where this is not already the case, and then highlight all of them in Sapphire and run the process for trusses with a completely removed connection (top row of the table). Unfortunately Remove Design Connection can only be run on one truss at a time in Engineering; however running the process for a previously-DC truss would have to be done one at a time as well since it requires saving each in Engineering immediately after creating.

1 If the loads originated in a previous Design-Connected environment that the truss was in, the truss must be operated on in some way prior to saving, for them to be visible later. This can even mean simply viewing the loads. and then saving.

2 If the carried truss .tre is missing or has not been run yet, a dialog will appear stating this.

3 If the profiles differ, Create Trusses will behave like Overwrite Engineering.

4 The truss quantity in Engineering will reset to the number in Sapphire, but future quantity changes in Sapphire, as well as real-time loading, will not be reflected until the second send.

5 If Sapphire has been closed and re-opened since the truss was pasted, it will have already been changed to the Production Truss.

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